

PLUNGER ASSEMBLY FOR USE IN RECIPROCATING FLUID PUMP EMPLOYING REVERSING POLARITY MOTOR

Abstract

A reciprocating pump includes a drive section and a pump section. The drive section has a reciprocating coil assembly to which alternating polarity control signals are applied during operation. A permanent magnet structure of the drive section creates a magnetic flux field which interacts with an electromagnetic field produced during application of the control signals to the coil. The coil assembly includes a drive member that drives a plunger assembly having a plunger and a valve stem movably interfitted within the plunger and having a lower poppet head. As the plunger is driven downwardly the plunger contacts the poppet head to drive it into the pump chamber to force the fluid therefrom. There is a gap between the poppet head and the plunger so that the initial downward movement of the plunger closes the gap to gain momentum before it contacts the poppet head and drives it downwardly.